1. Solve the equation for x and choose the interval that contains x (if it exists).

$$14 = \sqrt[3]{\frac{9}{e^{7x}}}$$

A. $x \in [-0.91, -0.62]$

B. $x \in [-7.34, -6.26]$

C. $x \in [-0.47, 0.88]$

D. There is no Real solution to the equation.

E. None of the above.

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2. Which of the following intervals describes the Range of the function below?

$$f(x) = -\log_2(x+4) - 9$$

A. $[a, \infty), a \in [-6.5, -3.1]$

B. $(-\infty, a), a \in [-10.4, -7.3]$

C. $[a, \infty), a \in [1.1, 4.8]$

D. $(-\infty, a), a \in [8.1, 9.9]$

E. $(-\infty, \infty)$

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3. Which of the following intervals describes the Range of the function below?

$$f(x) = e^{x-9} - 9$$

A. $(-\infty, a), a \in [4, 15]$

B. $[a, \infty), a \in [-14, -8]$

C. $(a, \infty), a \in [-14, -8]$

D. $(-\infty, a], a \in [4, 15]$

E. $(-\infty, \infty)$

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4. Solve the equation for x and choose the interval that contains x (if it exists).

$$19 = \ln \sqrt[3]{\frac{27}{e^{8x}}}$$

A. $x \in [6.4, 7.3]$

B. $x \in [-6, -3.8]$

C. $x \in [-2.8, 0.3]$

D. There is no Real solution to the equation.

E. None of the above.

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5. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$\log_5 (2x + 6) + 4 = 2$$

A. $x \in [6.5, 11.5]$

B. $x \in [-14, -11]$

C. $x \in [-4.98, 3.02]$

D. $x \in [-19, -15]$

E. There is no Real solution to the equation.

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6. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$3^{4x+3} = \left(\frac{1}{16}\right)^{-2x-2}$$

A. $x \in [-2.03, -1.11]$

B. $x \in [3.81, 4.49]$

C. $x \in [-1.47, -0.54]$

D. $x \in [-0.19, 0.44]$

E. There is no Real solution to the equation.

7. Which of the following intervals describes the Domain of the function below?

$$f(x) = -\log_2(x+7) - 3$$

A. $(-\infty, a], a \in [1.9, 3.8]$

B. $[a, \infty), a \in [-4.2, -0.4]$

C. $(-\infty, a), a \in [6, 9.5]$

D. $(a, \infty), a \in [-8.4, -6.4]$

E. $(-\infty, \infty)$

8. Which of the following intervals describes the Domain of the function below?

$$f(x) = -e^{x-6} - 9$$

A. $(-\infty, a), a \in [-10, -8]$

B. $(-\infty, a], a \in [-10, -8]$

C. $(a, \infty), a \in [3, 10]$

D. $[a, \infty), a \in [3, 10]$

E. $(-\infty, \infty)$

9. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$3^{5x+2} = \left(\frac{1}{125}\right)^{4x+5}$$

A. $x \in [-28.6, -26.1]$

B. $x \in [2.3, 4.3]$

C. $x \in [-3, -0.9]$

D. $x \in [-0.8, 2.6]$

E. There is no Real solution to the equation.

10. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$\log_5(3x+6)+6=2$$

A. $x \in [1.33, 12.33]$

B. $x \in [-342.33, -334.33]$

C. $x \in [-2, 6]$

D. $x \in [-347.33, -340.33]$

E. There is no Real solution to the equation.